

IN THE CLAIMS

The claims have not been amended herein, but are presented in full as they stand for the Examiner's convenience.

1. (Previously Presented) A zero mounting force solder-free connector for use with a receiving substrate, the connector comprising:
 - a housing; and
 - at least one pin associated with the housing, the at least one pin adapted to cooperate with an opening in the receiving substrate, the at least one pin movable between a first position where the at least one pin freely enters the opening in the receiving substrate, and a second position where the at least one pin engages the opening to establish a mechanical connection and an electrical connection with the at least one opening, the at least one opening including a portion of a conductive circuit pathway within the at least one opening.
2. (Previously Presented) The connector as in Claim 1, wherein the at least one pin has a substantially elliptical cross section.
3. (Previously Presented) The connector as in Claim 2, wherein the opening in the receiving substrate has a substantially elliptical cross-section.
4. (Original) The connector as in Claim 3, wherein movement of the pin from the first position to the second position is rotary.
5. (Previously Presented) The connector as in Claim 4, wherein the opening in the receiving substrate is plated with an electrically conductive material.
6. (Previously Presented) The connector as in Claim 1, wherein the at least one pin has a substantially oval cross-section.

7. (Previously Presented) The connector as in Claim 6, wherein the opening in the receiving substrate has a substantially oval cross-section that receives the at least one pin when the at least one pin is in the first position.

8. (Previously Presented) The connector as in Claim 7, wherein movement of the at least one pin from the first position to a second position is rotary.

9. (Previously Presented) The connector as in Claim 8, wherein the opening in the receiving substrate is plated with an electrically conductive material and is a portion of the conductive circuit pathway.

10. (Original) A zero mounting force solder-free connector for use with a printed circuit board, the connector comprising:

at least one pin adapted to cooperate with an opening in the printed circuit board such that when the pin is in a first position the pin freely enters the opening, and when the pin is moved to a second position the pin binds in the opening to thereby establish a mechanical connection with the opening and an electrical connection to a printed circuit on the board, and

a mechanism that cooperates with the pin to cause the pin to move from the first position to the second position to thereby secure the connector to the printed circuit board.

11. (Original) The connector as in Claim 10, wherein the mechanism includes a cam and cam follower that cooperate with the pin to rotate the pin from the first position to the second position.

12. (Original) The connector as in Claim 11, wherein the cam follower includes an opening that cooperates with the pin to cause the pin to rotate when the cam is moved.

13-14. (Canceled)

15. (Original) A zero mounting force solder-free connector for use with a circuit board and a module to be mechanically and electrically coupled via the connector to the board, the connector comprising:

at least one pin adapted to cooperate with an opening in the circuit board such that when the pin is in a first position the pin freely enters the opening, and when the pin is moved to a second position the pin binds in the opening to thereby establish a mechanical connection with the opening and an electrical connection to a conductive pathway on the board, and

the pin is adapted to mechanically and electrically couple the pin to the module and thereby electrically link the module via the connector to the conductive pathway on the board.

16. (Original) The connector as in Claim 15, wherein the connector further includes a mechanism that cooperates with the pin to cause the pin to move from the first position to the second position to thereby secure the connector to the circuit board.

17. (Original) The connector as in Claim 16, wherein the mechanism includes a cam and a cam follower that cooperate with a pin to rotate the pin from the first position to the second position.

18. (Original) The connector as in Claim 17, wherein the cam follower includes an opening that cooperates with the pin to cause the pin to rotate when the cam is moved.

19-20. (Canceled)

21. (Original) The connector as in Claim 18, wherein the pin has a substantially elliptical cross-section.

22. (Original) The connector as in claim 21 wherein the opening in the board has a substantially elliptical cross section that mates with the pin when the pin is in the first position.

23. (Original) The connector as in Claim 22, wherein movement of the pin from first position to the second position is rotary.

24. (Original) The connector as in claim 23 wherein the opening is plated through.

25. (Original) A method comprising:

forming an opening in a circuit board,
inserting a connector pin adapted to freely enter the circuit board opening when the pin is in a first position, and
moving the pin from the first position to a second position to thereby cause the pin to bind in the opening and establish a mechanical connection with the opening and an electrical connection to a conductive pathway on the circuit board.

26. (Original) The method as in Claim 25, wherein the forming of the opening in the circuit board comprises:

providing the opening with a substantially elliptical cross section.

27. (Original) The method as in Claim 26, wherein the connector pin comprises:

providing the pin with a substantially elliptical cross section that mates with the elliptical opening in the circuit board when the pin is in the first position and binds with the circuit board opening when the pin is moved to the second position.

28. (Original) A method comprising:

establishing a zero mounting force solder-free connector for use with a circuit board and a module to be mechanically and electrically coupled via the connector to the board,

forming an opening in the circuit board,
inserting a connector pin adapted to freely enter the circuit board opening when the pin is in a first position,

providing an electrical connection between the module, the connector and pin providing a mechanism to move the pin from the first position to a second position, and

moving the pin from the first position to the second position, the pin adapted when in the second position to bind in the opening of the circuit board to thereby mechanically and electrically couple the pin and module via the connector to a conductive pathway on the board.

29. (Original) The method as in Claim 28, wherein the forming of the opening in the circuit board comprises:

providing the opening with a substantially elliptical cross section.

30. (Canceled)

31. (Previously Presented) A connector comprising:

a substrate;

a plurality of electrical paths within the substrate; and

a plurality of pins rotatably connected to the substrate, each of the pins capable of being rotated between a first position and a second position.

32. (Previously Presented) The connector of claim 31 wherein the pins have an elliptical cross-sectional shape.

33. (Previously Presented) The connector of claim 31 wherein the pins have a non round cross-sectional shape.

34. (Previously Presented) The connector of claim 31 wherein the pins have a cross-sectional shape having a first diameter and a second diameter, wherein the first diameter is different than the second diameter.